

REMARKS

Entry of the foregoing and reconsideration of the application identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.111 and in light of the remarks which follow, are respectfully requested.

By the above amendments, claim 8 has been canceled without prejudice or disclaimer. Claims 1, 2 and 17-19 have been amended to recite that an amount of a monovalent counterion of the carboxylic group-containing water-insoluble absorbent resin is in a range of 10 to 65 mol%. Support for this amendment can be found in the instant specification at least at page 13, lines 15-25. Claims 1, 4, 9, 11, 21 and 22 have been amended for readability purposes. Claim 17 has been amended to delete the phrase "said water absorbent resin in a form of solution or a slurry".

At the outset, Applicants note with appreciation the indication that claim 14 would be allowable if rewritten in independent form including all of the features of the base claim and any intervening claims. See Official Action at page 9.

The drawings stand objected to for the reasons set forth at page 2 of the Official Action. As noted at page 7 of the specification, Figures 1(A) to 1(D) are photographs which show the results of plant growth under various conditions in Example 17. Applicants respectfully note that the contrast of the photographs is sufficient for adequately depicting the subject matter of such photographs, namely, general plant growth under various conditions. Accordingly, withdrawal of the objection to the drawings is respectfully requested.

Claims 9 and 17 stand rejected under 35 U.S.C. §112, second paragraph, for the reasons set forth at pages 2-3 of the Official Action. This rejection is moot in view of the above amendments, in which claim 9 has been amended to recite the phrase "a water content of the particulate water retaining material", and claim 17 has been

amended to delete the objected-to phrase "said water absorbent resin in a form of solution or a slurry". Accordingly, for at least the above reasons, withdrawal of the §112, second paragraph, rejection is respectfully requested.

Claims 1-13 and 15-22 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,140,076 (*Hatsuda et al*), as evidenced by <http://www.wovenwire.com/reference/particle-size.htm> (*Screen Technology Group*). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Independent claims 1 and 2 recite a particulate water retaining material for cultivating plant. Independent claims 17-19 recite a method for the production of a water retaining material for cultivating plant. As noted above, each of independent claims 1, 2 and 17-19 has been amended to recite that an amount of a monovalent counterion of the carboxylic group-containing water-insoluble absorbent resin is in a range of 10 to 65 mol%.

Hatsuda et al relates to a method of treating the surface of a absorbent resin by crosslinking the surface region of the absorbent resin homogeneously and effectively using a crosslinking agent. See col. 1, lines 8-12.

Hatsuda et al does not disclose or suggest each feature recited in independent claims 1, 2 and 17-19. For example, *Hatsuda et al* does not disclose or suggest that an amount of a monovalent counterion of the carboxylic group-containing water-insoluble absorbent resin is in a range of 10 to 65 mol%, as recited in such claims. In this regard, the Patent Office has relied on *Hatsuda et al* for disclosing the use of sodium acrylate having a neutralization ratio of 75 mol%. See Official Action at page 5. Such disclosed neutralization ratio, however, clearly lies outside the claimed range of 10 to 65 mol%.

Applicants have recognized that employing the monovalent counterion of the carboxylic group-containing water-insoluble absorbent resin in the claimed range of 10

to 65 mol%, for example, can be effective to impart good absorption properties while not adversely affecting plant growth. For example, Applicants have discovered that the use of exemplary particulate water retaining materials can promote rhizogenesis of plants by way of plant growth without calcium ion deficiency. See specification at page 6, lines 13-16. Experimental data showing the beneficial effects of exemplary aspects of the present invention are set forth in the examples of the specification. See pages 72 and 73, Tables 3 and 4. By comparison, *Hatsuda et al* has no recognition or suggestion of the result effective relationship, for example, between the amount of monovalent counterion, and the resulting absorption properties of the material and the effects on plant growth. Simply put, it would not have been obvious to modify *Hatsuda et al* to arrive at employing the monovalent counterion of the carboxylic group-containing water-insoluble absorbent resin in the claimed range of 10 to 65 mol%.

Screen Technology Group fails to cure the above-described deficiencies of *Hatsuda et al*. In this regard, the Patent Office has relied on *Screen Technology Group* for relating mesh size to particle size. See Official Action at page 4. However, even if *Screen Technology Group* would have been combined with *Hatsuda et al* in the manner suggested by the Patent Office, the resulting combination nevertheless fails to disclose or suggest that an amount of a monovalent counterion of the carboxylic group-containing water-insoluble absorbent resin is in a range of 10 to 65 mol%, as recited in claims 1, 2 and 17-19.

The claims are non-obvious over *Hatsuda et al* and *Screen Technology Group* for at least the above reasons. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Claims 1-13, 15-17, 19 and 20 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,026,800 (*Kimura et al*). Claims 21 and 22 stand

rejected under 35 U.S.C. §103(a) as being obvious over *Kimura et al* in view of International Publication No. WO 98/49252 (*Williams et al*). Withdrawal of these rejections is respectfully requested for at least the following reasons.

Kimura et al relates to a water-absorbent resin and a process for producing this resin. See col. 1, lines 6-7.

Kimura et al does not disclose or suggest each feature recited in independent claims 1, 2, 17 and 19. For example, *Kimura et al* does not disclose or suggest that an amount of a monovalent counterion of the carboxylic group-containing water-insoluble absorbent resin is in a range of 10 to 65 mol%, as recited in such claims. In fact, *Kimura et al* is completely silent concerning the amount of a monovalent counterion of the carboxylic group-containing water-insoluble absorbent resin.

As discussed above, Applicants have recognized that employing the monovalent counterion of the carboxylic group-containing water-insoluble absorbent resin in the claimed range of 10 to 65 mol%, can be effective to impart good absorption properties while not adversely affecting plant growth. By comparison, *Kimura et al* has no recognition or suggestion of the result effective relationship, for example, between the amount of monovalent counterion, and the resulting absorption properties of the material and the effects on plant growth. As such, it would not have been obvious to modify *Kimura et al* to arrive at employing the monovalent counterion of the carboxylic group-containing water-insoluble absorbent resin in the claimed range of 10 to 65 mol%. *Kimura et al* simply has no recognition or suggestion of such significance of the amount of the monovalent counterion.

Williams et al fails to cure the above-described deficiencies of *Kimura et al*. In this regard, the Patent Office has relied on *Williams et al* for disclosing the use of water absorbent resin for horticultural purposes. See Official Action at page 8. However,

even if *Williams et al* would have been combined with *Kimura et al* in the manner suggested by the Patent Office, the resulting combination nevertheless fails to disclose or suggest that an amount of a monovalent counterion of the carboxylic group-containing water-insoluble absorbent resin is in a range of 10 to 65 mol%, as recited in claims 1, 2, 17 and 19.

For at least the above reasons, it is apparent that the claims are non-obvious over *Kimura et al* and *Williams et al*. Accordingly, withdrawal of the above §103(a) rejections is respectfully requested.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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